

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural  
Resources Department

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NAPP2207743395
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Adrian Baker	Contact Telephone 432-236-3808
Contact email adrian.baker@exxonmobil.com	Incident # (assigned by OCD)
Contact mailing address 6401 Holiday Hill Rd Bldg 5, Midland, Texas, 79707	

### Location of Release Source

Latitude 32.20200 Longitude -103.83200  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit C1 Frac Pond	Site Type Recycle Pond
Date Release Discovered 03/05/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
J	24	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 18.00	Volume Recovered (bbls) 00.00
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)


Cause of Release Contractor fueling pump hit a layflat line causing a release of fluids to soil. A third-party contractor has been retained for remediation activities.

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

## Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Adrian Baker	Title: SSHE Coordinator
Signature: 	Date: 3/18/22
email: adrian.baker@exxonmobil.com	Telephone: 432-236-3808
<b><u>OCD Only</u></b>	
Received by: Jocelyn Harimon	Date: 03/18/2022

<b>Location:</b>	<b>PLU C1 Frac Pond</b>	
<b>Spill Date:</b>	<b>3/5/2022</b>	
<b>Area 1</b>		
Approximate Area =	2488.20	sq. ft.
Average Saturation (or depth) of spill =	3.25	inches
Average Porosity Factor =	0.15	
<b>VOLUME OF LEAK</b>		
Total Crude Oil =	0.00	bbls
Total Produced Water =	18.00	bbls
<b>TOTAL VOLUME OF LEAK</b>		
Total Crude Oil =	0.00	bbls
Total Produced Water =	18.00	bbls
<b>TOTAL VOLUME RECOVERED</b>		
Total Crude Oil =	0.00	bbls
Total Produced Water =	0.00	bbls

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## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

### **Characterization Report Checklist: Each of the following items must be included in the report.**

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Garrett Green Title: Environmental CoordinatorSignature:  Date: 09/01/2022email: garrett.green@exxonmobil.com Telephone: 575-200-0729**OCD Only**Received by: Jocelyn Harimon Date: 09/01/2022

Incident ID	NAPP2207743395
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## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Garrett Green Title: Environmental Coordinator


Signature:  Date: 09/01/2022

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

### OCD Only

Received by: Jocelyn Harimon Date: 09/01/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jocelyn Harimon  Date: 11/30/2022  
Printed Name: Jocelyn Harimon Title: Environmental Specialist



September 1, 2022

District II  
New Mexico Oil Conservation Division  
811 S. First Street  
Artesia, New Mexico 88210

**Re: Closure Request  
Poker Lake Unit C1 Frac Pond  
Incident Number NAPP2207743395  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following Closure Request to document excavation and soil sampling activities completed to address impacted soil at the Poker Lake Unit C1 Frac Pond (Site). Soil was impacted by a release of produced water onto the surface of the frac pond berm. Based on the excavation activities and analytical results from the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting closure for Incident Number NAPP2207743395.

#### **SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit J, Section 24, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.20200° N, 103.83200° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On March 5, 2022, a layflat line was damaged resulting in the release of approximately 18 barrels (bbls) of produced water. The release traveled down the side of the lined berm and pooled at the base of a hydraulic fracturing (frac) pond berm. No fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Form C-141 on March 18, 2022. The release was assigned Incident Number NAPP2207743395.

#### **SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater data is from New Mexico Office of the State Engineer (NMOSE) soil boring C-4483, located approximately 0.4 miles north of the Site. On November 24, 2020 the soil boring was drilled to a depth of 110 feet bgs. No groundwater was encountered. There are no surface features indicative of the presence of shallow groundwater. All

wells used for depth to water determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a freshwater pond located approximately 5,065 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

## SITE ASSESSMENT AND SAMPLING ACTIVITIES

On May 26, 2022, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Four preliminary soil samples (SS01 through SS04) were collected within and around the release extent from a depth of 0.5 feet bgs to assess the lateral extent of the release. The preliminary soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the site visit and a photographic log is included in Appendix B.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH- GRO, TPH- DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 through SS04 indicated that benzene, BTEX, TPH-GRO/TPH-DRO and TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for preliminary soil sample SS04, collected east of the release extent indicated benzene, BTEX, TPH and chloride concentrations were in compliance with the strictest Table 1 Closure Criteria confirming the lateral extent of the release. Laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C.

Vertical delineation at the locations of SS01 and SS02 was not possible due to the presense of the frac pond liner. The preliminary samples SS01 and SS02 were collected from soil just above the liner and any attempt to collect additional samples would have resulted in damage to the liner.



Based on the laboratory analytical results and presence of the berm liner, no additional remediation activities were warranted, however XTO voluntarily addressed surficial staining observed at the base of the frac pond berm.

## EXCAVATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

On August 1, 2022, Ensolum personnel returned to the Site to oversee excavation activities. Stained soil was excavated from the release area at the base of the berm using track-mounted backhoe and transport vehicle. To direct excavation activities, soil was screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The excavation was completed to a depth of 1 foot bgs. Photographic documentation of the excavation activities is included in Appendix B.

Following removal of the impacted soil, a 5-point composite soil sample was collected from the floor of the excavation. The 5-point composite sample was collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil sample FS01 was collected from the floor of the excavation at a depth of 1 foot bgs. Because the excavation was shallow, the floor sample composite sample included aliquots collected from the nearby sidewalls. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 160 square feet. Approximately 6 cubic yards of stained soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico.

Laboratory analytical results for excavation floor sample FS01 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and no further remediation was required. The laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C.

## CLOSURE REQUEST

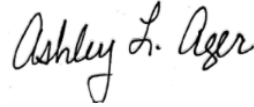
Site assessment and excavation activities were conducted at the Site to address the March 5, 2022 release of produced water that impacted a thin covering of soil on the berm of a lined frac pond. Laboratory analytical results from preliminary soil samples collected of soil overlying the lined berm were compliant with Site Closure Criteria. Additional vertical delineation of the berm was not possible without damaging the liner and the liner appeared intact. XTO excavated stained soil from the portion of the release extent that was not lined at the base of the berm. Laboratory analytical results for the excavation soil sample indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure. Based on the soil sample laboratory analytical results, no further remediation is required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. As such, XTO respectfully requests closure for Incident Number NAPP2207743395.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Tacoma Morrissey  
Senior Geologist



Ashley L. Ager, M.S., P.G.  
Program Director

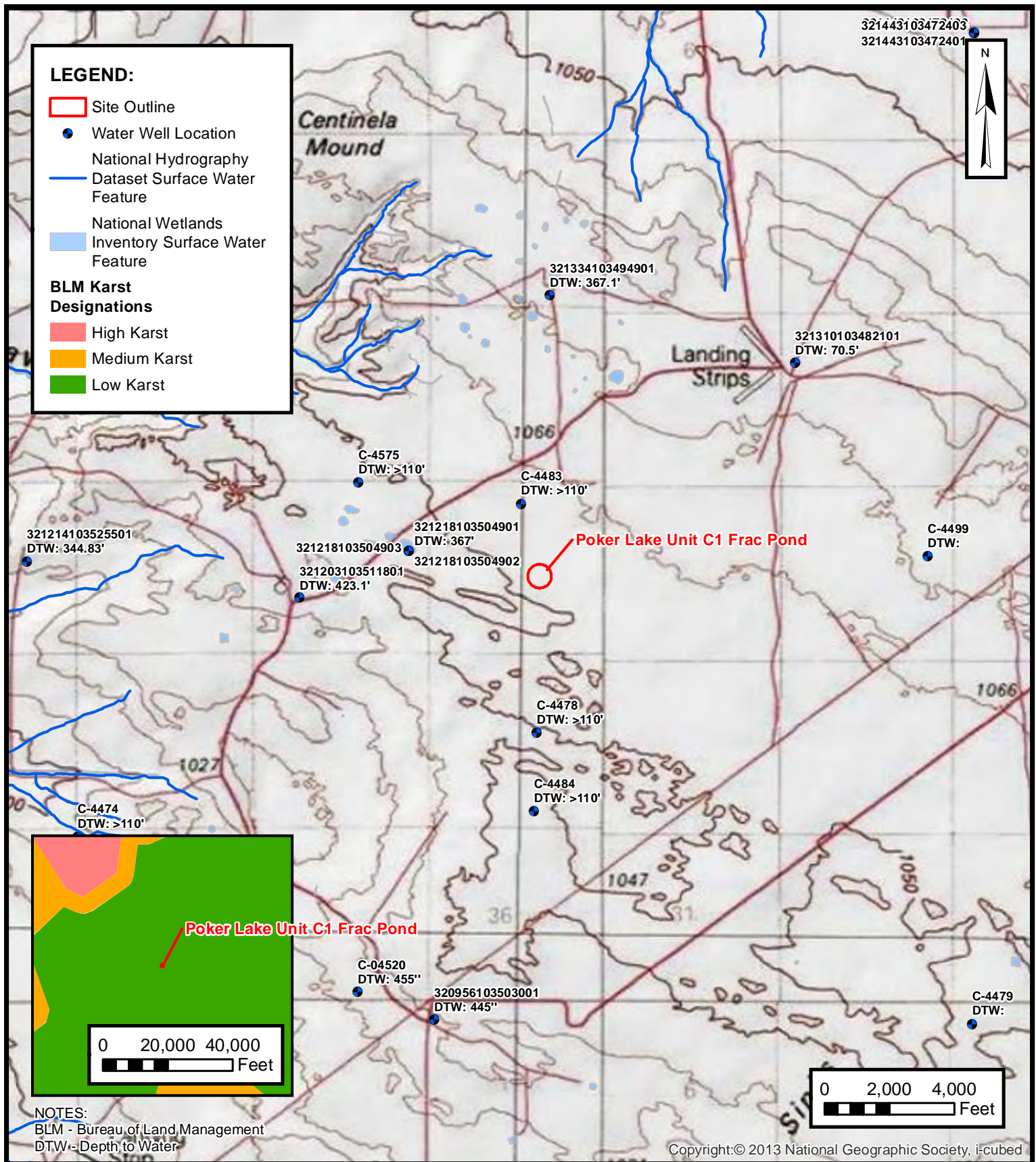
cc: Garrett Green, XTO  
Shelby Pennington, XTO  
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix D	NMOCD Notifications



FIGURES



**SITE RECEPTOR MAP**

XTO ENERGY, INC  
 POKER LAKE UNIT C1 FRAC POND  
 NAPP2207743395  
 Unit J, Sec 24, T24S, R30E  
 Eddy County, New Mexico

**FIGURE**  
**1**





### PRELIMINARY SOIL SAMPLE LOCATIONS

XTO ENERGY, INC  
POKER LAKE UNIT C1 FRAC POND  
NAPP2207743395  
Unit J, Sec 24, T24S, R30E  
Eddy County, New Mexico

**FIGURE**  
**2**



### EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC  
POKER LAKE UNIT C1 FRAC POND  
NAPP2207743395  
Unit J, Sec 24, T24S, R30E  
Eddy County, New Mexico

**FIGURE**  
**3**



TABLES



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Poker Lake Unit CI Frac Pond  
 XTO Energy, Inc.  
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table 1 Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
<b>Preliminary Soil Samples</b>										
SS01	05/26/2022	0.5	<0.00201	<0.00402	<49.8	99.0	<49.8	99.0	99.0	2,420
SS02	05/26/2022	0.5	<0.00199	<0.00398	<50.0	105	<50.0	105	105	6,580
SS03	05/26/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	5,070
SS04	05/26/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	55.0
<b>Floor Soil Samples</b>										
FS01	08/01/2022	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	799

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon





## APPENDIX A

### Referenced Well Records

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (BH-01)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4483			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	LATITUDE	DEGREES 32°	MINUTES 12'	SECONDS 31.77" N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
		LONGITUDE	-103°	50'	0.72" W			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE NW NW NE Sec. 24 T24S R30E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 11/24/2020	DRILLING ENDED 11/24/2020	DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 110	DEPTH WATER FIRST ENCOUNTERED (FT) n/a			
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)				STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a			
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	110	±8.5	Boring- HSA	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. C-4483	POD NO. 1	TRN NO. 679344
LOCATION 123 T245 R30E Sec 24	WELL TAG ID NO. NA	PAGE 1 OF 2

#### 4. HYDROGEOLOGIC LOG OF WELL

WR-20 WELL RECORD & LOG (Version 06/30/2017)

John R. D Antonio, Jr., P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 679344  
File Nbr: C 04483  
Well File Nbr: C 04483 POD1

Jan. 22, 2021

TACOMA MORRISSEY  
LT ENVIRONMENTAL INC  
508 WEST STEVENS  
CARLSBAD, NM 88220

Greetings:

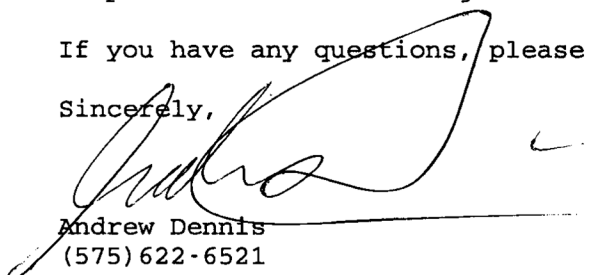
The above numbered permit was issued in your name on 09/29/2020.

The Well Record was received in this office on 12/17/2020, stating that it had been completed on 11/24/2020, and was a dry well. The well is to be plugged according to 19.27.4.30 NMAC.

Please note that another well can be drilled under this permit if the well is completed and the well log filed on or before 09/29/2021.

If you have any questions, please feel free to contact us.

Sincerely,

  
Andrew Dennis  
(575) 622-6521

drywell



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## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

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- Explore the *NEW* [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- Attention current WaterAlert users: NextGen WaterAlert is replacing Legacy WaterAlert. You must take action before 9/30/2022 to retain your alerts. [Read more.](#)
- [Full News](#) 

Groundwater levels for the Nation



Important: [Next Generation Monitoring Location Page](#)

## Search Results -- 1 sites found

site\_no list =

- 321334103494901

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

## USGS 321334103494901 24S.30E.12.432344

Available data for this site

Groundwater: Field measurements



GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°13'34", Longitude 103°49'49" NAD27

Land-surface elevation 3,522 feet above NAVD88

The depth of the well is 500 feet below land surface.

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

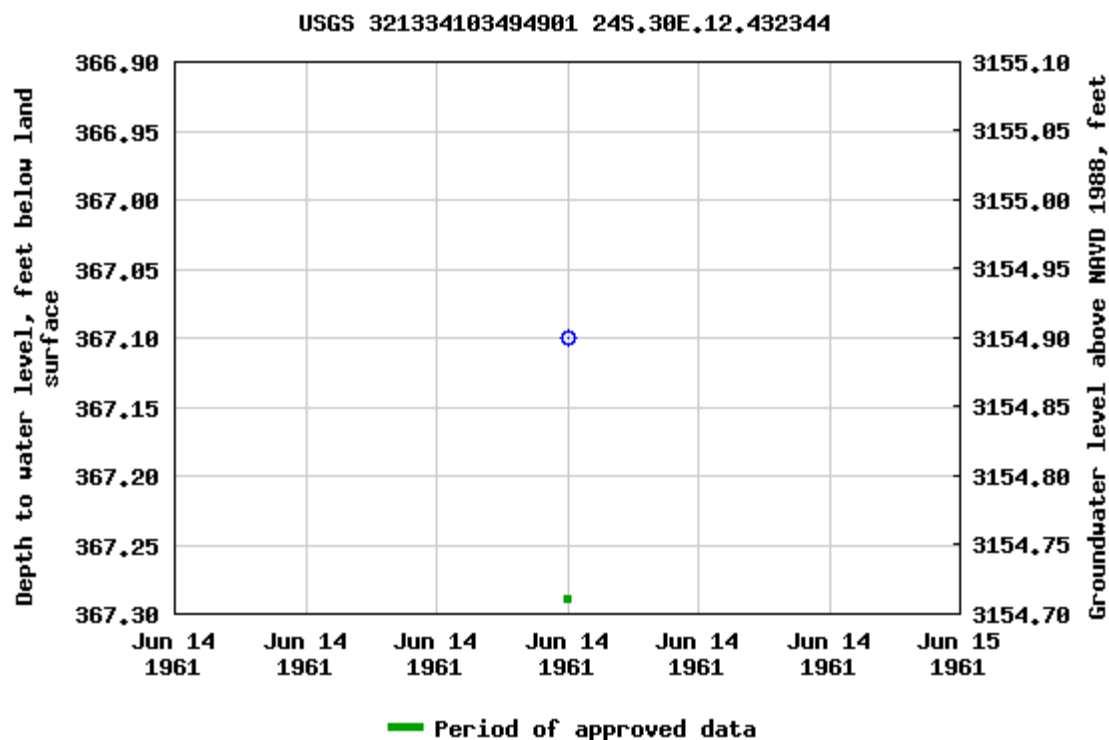
### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one year between field measurements.

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**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-08-29 14:01:55 EDT

0.6 0.52 nadww01



## APPENDIX B

### Photographic Log

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**Photographic Log**

XTO Energy, Inc.

Poker Lake Unit C1 Frac Pond

Incident Number NAPP2207743395



Photograph 1 Date: May 26, 2022

Description: North view of release extent on berm surface. No staining observed and liner is visible just beneath berm soils.



Photograph 2 Date: May 26, 2022

Description: View of staining at the base of the berm where fluids pooled, facing northwest.



Photograph 3 Date: Aug 1, 2022

Description: View of ongoing excavation of stained soils facing north.



Photograph 4 Date: Aug 1, 2022

Description: View of final excavation of stained soils, facing south.





## APPENDIX C

### Laboratory Analytical Reports & Chain of Custody Documentation

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## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-2358-1

Laboratory Sample Delivery Group: 03E1558018

Client Project/Site: POKER LAKE UNIT C1 FRAC POND

**For:**

Ensolum  
705 W. Wadley  
Suite 210  
Midland, Texas 79701

Attn: Kalei Jennings

Authorized for release by:

6/3/2022 1:28:16 PM

Jessica Kramer, Project Manager  
(432)704-5440

[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

#### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Laboratory Job ID: 890-2358-1  
SDG: 03E1558018

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## Definitions/Glossary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

## GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

**Job ID: 890-2358-1****Laboratory: Eurofins Carlsbad****Narrative****Job Narrative  
890-2358-1****Receipt**

The samples were received on 5/27/2022 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

**GC VOA**

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-26732 and analytical batch 880-26723 recovered outside control limits for the following analytes: Benzene.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26732 and analytical batch 880-26723 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**GC Semi VOA**

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-26466 and analytical batch 880-26613 was outside control limits. Sample non-homogeneity is suspected.

Method 8015MOD\_NM: The method blank for preparation batch 880-26657 and analytical batch 880-26613 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**HPLC/IC**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

## Client Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Client Sample ID: SS01

Lab Sample ID: 890-2358-1

Date Collected: 05/26/22 12:15

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U F1 *1 F2	0.00201	mg/Kg		06/02/22 11:29	06/03/22 06:34	1
Toluene	<0.00201	U F1 F2	0.00201	mg/Kg		06/02/22 11:29	06/03/22 06:34	1
Ethylbenzene	<0.00201	U F1 F2	0.00201	mg/Kg		06/02/22 11:29	06/03/22 06:34	1
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.00402	mg/Kg		06/02/22 11:29	06/03/22 06:34	1
o-Xylene	<0.00201	U F1 F2	0.00201	mg/Kg		06/02/22 11:29	06/03/22 06:34	1
Xylenes, Total	<0.00402	U F1 F2	0.00402	mg/Kg		06/02/22 11:29	06/03/22 06:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	06/02/22 11:29	06/03/22 06:34	1
1,4-Difluorobenzene (Surr)	92		70 - 130	06/02/22 11:29	06/03/22 06:34	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			06/03/22 14:08	1

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	99.0		49.8	mg/Kg			06/02/22 09:37	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		06/01/22 11:30	06/01/22 19:16	1
Diesel Range Organics (Over C10-C28)	99.0		49.8	mg/Kg		06/01/22 11:30	06/01/22 19:16	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		06/01/22 11:30	06/01/22 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	06/01/22 11:30	06/01/22 19:16	1
o-Terphenyl	111		70 - 130	06/01/22 11:30	06/01/22 19:16	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2420		24.9	mg/Kg			06/02/22 10:54	5

Client Sample ID: SS02

Lab Sample ID: 890-2358-2

Date Collected: 05/26/22 12:20

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *1	0.00199	mg/Kg		06/02/22 11:29	06/03/22 06:54	1
Toluene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 06:54	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 06:54	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		06/02/22 11:29	06/03/22 06:54	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 06:54	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		06/02/22 11:29	06/03/22 06:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	06/02/22 11:29	06/03/22 06:54	1

Eurofins Carlsbad

## Client Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Client Sample ID: SS02

Lab Sample ID: 890-2358-2

Date Collected: 05/26/22 12:20

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	93		70 - 130	06/02/22 11:29	06/03/22 06:54	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			06/03/22 14:08	1

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	105		50.0	mg/Kg			06/02/22 09:37	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/01/22 11:30	06/01/22 19:38	1
Diesel Range Organics (Over C10-C28)	105		50.0	mg/Kg		06/01/22 11:30	06/01/22 19:38	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/01/22 11:30	06/01/22 19:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			06/01/22 11:30	06/01/22 19:38	1
o-Terphenyl	102		70 - 130			06/01/22 11:30	06/01/22 19:38	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6580		49.8	mg/Kg			06/02/22 11:04	10

Client Sample ID: SS03

Lab Sample ID: 890-2358-3

Date Collected: 05/26/22 12:25

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *1	0.00199	mg/Kg		06/02/22 11:29	06/03/22 07:15	1
Toluene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 07:15	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 07:15	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		06/02/22 11:29	06/03/22 07:15	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		06/02/22 11:29	06/03/22 07:15	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		06/02/22 11:29	06/03/22 07:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	06/02/22 11:29	06/03/22 07:15	1
1,4-Difluorobenzene (Surr)	96		70 - 130	06/02/22 11:29	06/03/22 07:15	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			06/03/22 14:08	1

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			06/02/22 09:37	1

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## Client Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Client Sample ID: SS03

Lab Sample ID: 890-2358-3

Date Collected: 05/26/22 12:25

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		06/01/22 11:30	06/01/22 19:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		06/01/22 11:30	06/01/22 19:59	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		06/01/22 11:30	06/01/22 19:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130			06/01/22 11:30	06/01/22 19:59	1
o-Terphenyl	106		70 - 130			06/01/22 11:30	06/01/22 19:59	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5070		49.5	mg/Kg			06/02/22 11:13	10

## Client Sample ID: SS04

Lab Sample ID: 890-2358-4

Date Collected: 05/26/22 14:20

Matrix: Solid

Date Received: 05/27/22 16:40

Sample Depth: 0.5'

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *1	0.00200	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		06/02/22 11:29	06/03/22 07:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	128		70 - 130			06/02/22 11:29	06/03/22 07:35	1
1,4-Difluorobenzene (Surr)	88		70 - 130			06/02/22 11:29	06/03/22 07:35	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			06/03/22 14:08	1

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			06/02/22 09:37	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		06/01/22 14:08	06/02/22 00:57	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		06/01/22 14:08	06/02/22 00:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		06/01/22 14:08	06/02/22 00:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130			06/01/22 14:08	06/02/22 00:57	1
o-Terphenyl	94		70 - 130			06/01/22 14:08	06/02/22 00:57	1

Eurofins Carlsbad



Client Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

**Client Sample ID: SS04**  
Date Collected: 05/26/22 14:20  
Date Received: 05/27/22 16:40  
Sample Depth: 0.5'

**Lab Sample ID: 890-2358-4**  
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	55.0		4.96	mg/Kg			06/02/22 11:22	1	

## Surrogate Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2358-1	SS01	102	92
890-2358-1 MS	SS01	126	85
890-2358-1 MSD	SS01	125	87
890-2358-2	SS02	106	93
890-2358-3	SS03	103	96
890-2358-4	SS04	128	88
LCS 880-26723/3	Lab Control Sample	98	97
LCSD 880-26723/4	Lab Control Sample Dup	114	94
LCSD 880-26732/2-A	Lab Control Sample Dup	109	96
MB 880-26723/8	Method Blank	107	100
MB 880-26732/5-A	Method Blank	108	97
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-15264-A-21-E MS	Matrix Spike	85	79
880-15264-A-21-F MSD	Matrix Spike Duplicate	92	87
890-2357-A-1-C MS	Matrix Spike	93	86
890-2357-A-1-D MSD	Matrix Spike Duplicate	92	86
890-2358-1	SS01	103	111
890-2358-2	SS02	96	102
890-2358-3	SS03	101	106
890-2358-4	SS04	91	94
LCS 880-26466/2-A	Lab Control Sample	96	93
LCS 880-26657/2-A	Lab Control Sample	115	112
LCSD 880-26466/3-A	Lab Control Sample Dup	97	97
LCSD 880-26657/3-A	Lab Control Sample Dup	104	99
MB 880-26466/1-A	Method Blank	95	107
MB 880-26657/1-A	Method Blank	106	118
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-26723/8

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			06/02/22 19:35	1
Toluene	<0.00200	U	0.00200	mg/Kg			06/02/22 19:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			06/02/22 19:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			06/02/22 19:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			06/02/22 19:35	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			06/02/22 19:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130		06/02/22 19:35	1
1,4-Difluorobenzene (Surr)	100		70 - 130		06/02/22 19:35	1

Lab Sample ID: LCS 880-26723/3

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09952		mg/Kg		100	70 - 130
Toluene	0.100	0.09677		mg/Kg		97	70 - 130
Ethylbenzene	0.100	0.1048		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2023		mg/Kg		101	70 - 130
o-Xylene	0.100	0.09314		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-26723/4

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1035		mg/Kg		103	70 - 130	4	35
Toluene	0.100	0.1107		mg/Kg		111	70 - 130	13	35
Ethylbenzene	0.100	0.1275		mg/Kg		127	70 - 130	20	35
m-Xylene & p-Xylene	0.200	0.2600		mg/Kg		130	70 - 130	25	35
o-Xylene	0.100	0.1169		mg/Kg		117	70 - 130	23	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: MB 880-26732/5-A

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26732

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 06:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 06:12	1

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## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-26732/5-A

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26732

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 06:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/02/22 11:29	06/03/22 06:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/02/22 11:29	06/03/22 06:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/02/22 11:29	06/03/22 06:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	06/02/22 11:29	06/03/22 06:12	1
1,4-Difluorobenzene (Surr)	97		70 - 130	06/02/22 11:29	06/03/22 06:12	1

Lab Sample ID: LCSD 880-26732/2-A

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26732

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07063	*1	mg/Kg		71	70 - 130	40	35
Toluene	0.100	0.07592		mg/Kg		76	70 - 130	25	35
Ethylbenzene	0.100	0.08356		mg/Kg		84	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.1654		mg/Kg		83	70 - 130	20	35
o-Xylene	0.100	0.07869		mg/Kg		79	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 890-2358-1 MS

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 26732

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD
Benzene	<0.00201	U F1 *1 F2	0.101	0.02618	F1	mg/Kg		26	70 - 130	
Toluene	<0.00201	U F1 F2	0.101	0.03647	F1	mg/Kg		36	70 - 130	
Ethylbenzene	<0.00201	U F1 F2	0.101	0.04234	F1	mg/Kg		42	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.202	0.08906	F1	mg/Kg		44	70 - 130	
o-Xylene	<0.00201	U F1 F2	0.101	0.04507	F1	mg/Kg		44	70 - 130	

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	126		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-2358-1 MSD

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 26732

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1 *1 F2	0.0998	0.05830	F1 F2	mg/Kg		58	70 - 130	76	35
Toluene	<0.00201	U F1 F2	0.0998	0.07534	F2	mg/Kg		75	70 - 130	70	35

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## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-2358-1 MSD

Matrix: Solid

Analysis Batch: 26723

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 26732

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylbenzene	<0.00201	U F1 F2	0.0998	0.09191	F2	mg/Kg		92	70 - 130	74	35
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.200	0.1906	F2	mg/Kg		95	70 - 130	73	35
o-Xylene	<0.00201	U F1 F2	0.0998	0.08909	F2	mg/Kg		88	70 - 130	66	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-26466/1-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26466

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/27/22 15:22	06/01/22 10:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/27/22 15:22	06/01/22 10:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/27/22 15:22	06/01/22 10:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130	05/27/22 15:22	06/01/22 10:43	1
o-Terphenyl	107		70 - 130	05/27/22 15:22	06/01/22 10:43	1

Lab Sample ID: LCS 880-26466/2-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 26466

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	750.0		mg/Kg		75	70 - 130
Diesel Range Organics (Over C10-C28)	1000	929.0		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	93		70 - 130

Lab Sample ID: LCSD 880-26466/3-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26466

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	751.0		mg/Kg		75	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	1000	963.7		mg/Kg		96	70 - 130	4	20

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## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 880-26466/3-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26466

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: 880-15264-A-21-E MS

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26466

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	710.4		mg/Kg		71	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	858.5		mg/Kg		86	70 - 130	
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	85		70 - 130							
o-Terphenyl	79		70 - 130							

Lab Sample ID: 880-15264-A-21-F MSD

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 26466

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	999	873.3	F2	mg/Kg		87	70 - 130	21	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	999	958.0		mg/Kg		96	70 - 130	11	20	
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	92		70 - 130									
o-Terphenyl	87		70 - 130									

Lab Sample ID: MB 880-26657/1-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26657

	MB	MB								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/01/22 14:08	06/01/22 20:42	1		
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/01/22 14:08	06/01/22 20:42	1		
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/01/22 14:08	06/01/22 20:42	1		
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac		
1-Chlorooctane	106		70 - 130			06/01/22 14:08	06/01/22 20:42	1		
o-Terphenyl	118		70 - 130			06/01/22 14:08	06/01/22 20:42	1		

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## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-26657/2-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 26657

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	971.4		mg/Kg		97		70 - 130		
Diesel Range Organics (Over C10-C28)	1000	1184		mg/Kg		118		70 - 130		

Lab Sample ID: LCSD 880-26657/3-A

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26657

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10			1000	820.8		mg/Kg		82	70 - 130	17	20
Diesel Range Organics (Over C10-C28)			1000	1055		mg/Kg		105	70 - 130	12	20
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	104		70 - 130								
o-Terphenyl	99		70 - 130								

Lab Sample ID: 890-2357-A-1-C MS

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26657

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	777.3		mg/Kg		78	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	913.5		mg/Kg		89	70 - 130		
			</								

Lab Sample ID: 890-2357-A-1-D MSD

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 26657

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	783.4		mg/Kg		78	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	919.9		mg/Kg		90	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	92		70 - 130								

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## QC Sample Results

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-2357-A-1-D MSD

Matrix: Solid

Analysis Batch: 26613

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 26657

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	86		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-26572/1-A

Matrix: Solid

Analysis Batch: 26687

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB	MB							
	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	<5.00	U	5.00	mg/Kg			06/02/22 08:55		1

Lab Sample ID: LCS 880-26572/2-A

Matrix: Solid

Analysis Batch: 26687

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike	LCS	LCS					%Rec	
	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	250	231.9		mg/Kg		93	90 - 110		

Lab Sample ID: LCSD 880-26572/3-A

Matrix: Solid

Analysis Batch: 26687

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike	LCSD	LCSD					%Rec	RPD
	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	232.7		mg/Kg		93	90 - 110	0	20

Lab Sample ID: 890-2357-A-2-B MS

Matrix: Solid

Analysis Batch: 26687

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample	Sample	Spike	MS	MS			%Rec	
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	2300		1250	3534		mg/Kg		99	90 - 110

Lab Sample ID: 890-2357-A-2-C MSD

Matrix: Solid

Analysis Batch: 26687

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample	Sample	Spike	MSD	MSD			%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	2300		1250	3554		mg/Kg		101	90 - 110



## QC Association Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## GC VOA

## Analysis Batch: 26723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	8021B	26732
890-2358-2	SS02	Total/NA	Solid	8021B	26732
890-2358-3	SS03	Total/NA	Solid	8021B	26732
890-2358-4	SS04	Total/NA	Solid	8021B	26732
MB 880-26723/8	Method Blank	Total/NA	Solid	8021B	
MB 880-26732/5-A	Method Blank	Total/NA	Solid	8021B	26732
LCS 880-26723/3	Lab Control Sample	Total/NA	Solid	8021B	
LCSD 880-26723/4	Lab Control Sample Dup	Total/NA	Solid	8021B	
LCSD 880-26732/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	26732
890-2358-1 MS	SS01	Total/NA	Solid	8021B	26732
890-2358-1 MSD	SS01	Total/NA	Solid	8021B	26732

## Prep Batch: 26732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	5035	
890-2358-2	SS02	Total/NA	Solid	5035	
890-2358-3	SS03	Total/NA	Solid	5035	
890-2358-4	SS04	Total/NA	Solid	5035	
MB 880-26732/5-A	Method Blank	Total/NA	Solid	5035	
LCSD 880-26732/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2358-1 MS	SS01	Total/NA	Solid	5035	
890-2358-1 MSD	SS01	Total/NA	Solid	5035	

## Analysis Batch: 26831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	Total BTEX	
890-2358-2	SS02	Total/NA	Solid	Total BTEX	
890-2358-3	SS03	Total/NA	Solid	Total BTEX	
890-2358-4	SS04	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 26466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	8015NM Prep	
890-2358-2	SS02	Total/NA	Solid	8015NM Prep	
890-2358-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-26466/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-26466/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-26466/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-15264-A-21-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15264-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 26613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	8015B NM	26466
890-2358-2	SS02	Total/NA	Solid	8015B NM	26466
890-2358-3	SS03	Total/NA	Solid	8015B NM	26466
890-2358-4	SS04	Total/NA	Solid	8015B NM	26657
MB 880-26466/1-A	Method Blank	Total/NA	Solid	8015B NM	26466
MB 880-26657/1-A	Method Blank	Total/NA	Solid	8015B NM	26657

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## QC Association Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

## GC Semi VOA (Continued)

## Analysis Batch: 26613 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-26466/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	26466
LCS 880-26657/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	26657
LCSD 880-26466/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	26466
LCSD 880-26657/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	26657
880-15264-A-21-E MS	Matrix Spike	Total/NA	Solid	8015B NM	26466
880-15264-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	26466
890-2357-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	26657
890-2357-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	26657

## Prep Batch: 26657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-4	SS04	Total/NA	Solid	8015NM Prep	
MB 880-26657/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-26657/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-26657/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2357-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2357-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 26708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Total/NA	Solid	8015 NM	
890-2358-2	SS02	Total/NA	Solid	8015 NM	
890-2358-3	SS03	Total/NA	Solid	8015 NM	
890-2358-4	SS04	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 26572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Soluble	Solid	DI Leach	
890-2358-2	SS02	Soluble	Solid	DI Leach	
890-2358-3	SS03	Soluble	Solid	DI Leach	
890-2358-4	SS04	Soluble	Solid	DI Leach	
MB 880-26572/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-26572/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-26572/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2357-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2357-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 26687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2358-1	SS01	Soluble	Solid	300.0	26572
890-2358-2	SS02	Soluble	Solid	300.0	26572
890-2358-3	SS03	Soluble	Solid	300.0	26572
890-2358-4	SS04	Soluble	Solid	300.0	26572
MB 880-26572/1-A	Method Blank	Soluble	Solid	300.0	26572
LCS 880-26572/2-A	Lab Control Sample	Soluble	Solid	300.0	26572
LCSD 880-26572/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	26572
890-2357-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	26572
890-2357-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	26572

Eurofins Carlsbad

## Lab Chronicle

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Client Sample ID: SS01

Lab Sample ID: 890-2358-1

Date Collected: 05/26/22 12:15

Matrix: Solid

Date Received: 05/27/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	26732	06/02/22 11:29	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	26723	06/03/22 06:34	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26831	06/03/22 14:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26708	06/02/22 09:37	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	26466	06/01/22 11:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26613	06/01/22 19:16	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	26572	05/31/22 10:56	SC	XEN MID
Soluble	Analysis	300.0		5			26687	06/02/22 10:54	CH	XEN MID

Client Sample ID: SS02

Lab Sample ID: 890-2358-2

Date Collected: 05/26/22 12:20

Matrix: Solid

Date Received: 05/27/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	26732	06/02/22 11:29	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	26723	06/03/22 06:54	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26831	06/03/22 14:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26708	06/02/22 09:37	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	26466	06/01/22 11:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26613	06/01/22 19:38	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	26572	05/31/22 10:56	SC	XEN MID
Soluble	Analysis	300.0		10			26687	06/02/22 11:04	CH	XEN MID

Client Sample ID: SS03

Lab Sample ID: 890-2358-3

Date Collected: 05/26/22 12:25

Matrix: Solid

Date Received: 05/27/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	26732	06/02/22 11:29	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	26723	06/03/22 07:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26831	06/03/22 14:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26708	06/02/22 09:37	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	26466	06/01/22 11:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26613	06/01/22 19:59	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	26572	05/31/22 10:56	SC	XEN MID
Soluble	Analysis	300.0		10			26687	06/02/22 11:13	CH	XEN MID

Client Sample ID: SS04

Lab Sample ID: 890-2358-4

Date Collected: 05/26/22 14:20

Matrix: Solid

Date Received: 05/27/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	26732	06/02/22 11:29	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	26723	06/03/22 07:35	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26831	06/03/22 14:08	SM	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Client Sample ID: SS04      Lab Sample ID: 890-2358-4  
Date Collected: 05/26/22 14:20      Matrix: Solid  
Date Received: 05/27/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			26708	06/02/22 09:37	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	26657	06/01/22 14:08	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26613	06/02/22 00:57	SM	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	26572	05/31/22 10:56	SC	XEN MID
Soluble	Analysis	300.0		1			26687	06/02/22 11:22	CH	XEN MID

Laboratory References:  
XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

## Method Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Ensolum  
Project/Site: POKER LAKE UNIT C1 FRAC POND

Job ID: 890-2358-1  
SDG: 03E1558018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2358-1	SS01	Solid	05/26/22 12:15	05/27/22 16:40	0.5'
890-2358-2	SS02	Solid	05/26/22 12:20	05/27/22 16:40	0.5'
890-2358-3	SS03	Solid	05/26/22 12:25	05/27/22 16:40	0.5'
890-2358-4	SS04	Solid	05/26/22 14:20	05/27/22 16:40	0.5'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14





# Environment Testing

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

## Chain of Custody

**Work Order No:**

Page 1 of 1  
www.xenco.com

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Adrian Baker
Company Name:	Ensolum LLC	Company Name:	XTO Energy, Inc.
Address:		Address:	3104 E. Green Street
City, State ZIP:		City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8307	Email:	Imorrissey@ensolum.com

Work Order Comments	
Program: UST/PST <input type="checkbox"/> RRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>	
Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:	

[illegible][illegible]

	Total	200.7 / 6010	200.8 / 6020:	
Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLP / SPLP 6010: 8RCRA	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> , Na Sr Ti Sn U V Zn	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$65.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		5/27/22 16:43			
3					
5					



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2358-1

SDG Number: 03E1558018

Login Number: 2358

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2358-1

SDG Number: 03E1558018

Login Number: 2358

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 06/01/22 11:10 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-2698-1

Laboratory Sample Delivery Group: 03E1558018

Client Project/Site: PLU C1 Frac Pond

**For:**

Ensolum  
705 W. Wadley  
Suite 210  
Midland, Texas 79701

Attn: Tacoma Morrissey

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:

8/10/2022 7:58:36 AM

Jessica Kramer, Project Manager  
(432)704-5440

[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

#### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Laboratory Job ID: 890-2698-1  
SDG: 03E1558018

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## Definitions/Glossary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

## GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

**Job ID: 890-2698-1****Laboratory: Eurofins Carlsbad****Narrative****Job Narrative  
890-2698-1****Receipt**

The sample was received on 8/1/2022 2:35 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

**GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31571 and 880-31607 and analytical batch 880-31541 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery was outside acceptance limits for the following matrix spike/matrix spike duplicate (MS/MSD) sample: (890-2682-A-1-D MS). The parent sample's surrogate recovery was within limits. The MS/MSD sample has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**GC Semi VOA**

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31438 and analytical batch 880-31455 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-31438 and analytical batch 880-31455 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-31438/2-A) and (890-2702-A-1-B MS). Evidence of matrix interferences is not obvious.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**HPLC/IC**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

## Client Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

Client Sample ID: FS01

Lab Sample ID: 890-2698-1

Date Collected: 08/01/22 12:46

Matrix: Solid

Date Received: 08/01/22 14:35

Sample Depth: 1

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/05/22 10:52	08/06/22 09:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/05/22 10:52	08/06/22 09:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/05/22 10:52	08/06/22 09:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/05/22 10:52	08/06/22 09:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		08/05/22 10:52	08/06/22 09:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/05/22 10:52	08/06/22 09:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	08/05/22 10:52	08/06/22 09:12	1
1,4-Difluorobenzene (Surr)	102		70 - 130	08/05/22 10:52	08/06/22 09:12	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/08/22 14:53	1

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/05/22 08:59	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/05/22 03:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/05/22 03:30	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/05/22 03:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130	08/03/22 15:09	08/05/22 03:30	1
o-Terphenyl	89		70 - 130	08/03/22 15:09	08/05/22 03:30	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	799		4.97	mg/Kg			08/09/22 19:11	1

Eurofins Carlsbad



## Surrogate Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-17546-A-41-E MS	Matrix Spike	101	101
880-17546-A-41-F MSD	Matrix Spike Duplicate	102	98
890-2682-A-1-D MS	Matrix Spike	158 S1+	92
890-2682-A-1-E MSD	Matrix Spike Duplicate	120	81
890-2698-1	FS01	100	102
LCS 880-31571/1-A	Lab Control Sample	106	102
LCS 880-31607/1-A	Lab Control Sample	103	98
LCSD 880-31571/2-A	Lab Control Sample Dup	111	102
LCSD 880-31607/2-A	Lab Control Sample Dup	100	99
MB 880-31326/5-A	Method Blank	92	104
MB 880-31571/5-A	Method Blank	91	103
MB 880-31607/5-A	Method Blank	92	102
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-2698-1	FS01	77	89
890-2702-A-1-B MS	Matrix Spike	67 S1-	76
890-2702-A-1-C MSD	Matrix Spike Duplicate	79	88
LCS 880-31438/2-A	Lab Control Sample	124	131 S1+
LCSD 880-31438/3-A	Lab Control Sample Dup	121	129
MB 880-31438/1-A	Method Blank	88	104
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31326/5-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31326

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:01	08/05/22 12:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:01	08/05/22 12:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:01	08/05/22 12:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 14:01	08/05/22 12:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:01	08/05/22 12:07	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 14:01	08/05/22 12:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	08/02/22 14:01	08/05/22 12:07	1
1,4-Difluorobenzene (Surr)	104		70 - 130	08/02/22 14:01	08/05/22 12:07	1

Lab Sample ID: MB 880-31571/5-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31571

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 10:52	08/06/22 00:45	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 10:52	08/06/22 00:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 10:52	08/06/22 00:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 10:52	08/06/22 00:45	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 10:52	08/06/22 00:45	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 10:52	08/06/22 00:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	08/05/22 10:52	08/06/22 00:45	1
1,4-Difluorobenzene (Surr)	103		70 - 130	08/05/22 10:52	08/06/22 00:45	1

Lab Sample ID: LCS 880-31571/1-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1096		mg/Kg		110	70 - 130
Toluene	0.100	0.1067		mg/Kg		107	70 - 130
Ethylbenzene	0.100	0.1107		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2247		mg/Kg		112	70 - 130
o-Xylene	0.100	0.1114		mg/Kg		111	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: LCSD 880-31571/2-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31571

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1076		mg/Kg		108	70 - 130	2	35

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-31571/2-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31571

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1077		mg/Kg		108	70 - 130	1	35
Ethylbenzene	0.100	0.1093		mg/Kg		109	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2226		mg/Kg		111	70 - 130	1	35
o-Xylene	0.100	0.1110		mg/Kg		111	70 - 130	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-2682-A-1-D MS

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31571

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F1 F2	0.101	0.04519	F1	mg/Kg		45	70 - 130
Toluene	0.00706	F1	0.101	0.03864	F1	mg/Kg		31	70 - 130
Ethylbenzene	0.0326	F1 F2	0.101	0.08902	F1	mg/Kg		56	70 - 130
m-Xylene & p-Xylene	0.189	F1 F2	0.201	0.4471		mg/Kg		129	70 - 130
o-Xylene	0.0715	F1 F2	0.101	0.1718		mg/Kg		100	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	158	S1+	70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2682-A-1-E MSD

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31571

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1 F2	0.0990	0.03044	F1 F2	mg/Kg		31	70 - 130	39	35
Toluene	0.00706	F1	0.0990	0.03443	F1	mg/Kg		28	70 - 130	12	35
Ethylbenzene	0.0326	F1 F2	0.0990	0.05788	F1 F2	mg/Kg		26	70 - 130	42	35
m-Xylene & p-Xylene	0.189	F1 F2	0.198	0.2595	F1 F2	mg/Kg		36	70 - 130	53	35
o-Xylene	0.0715	F1 F2	0.0990	0.09382	F1 F2	mg/Kg		23	70 - 130	59	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	81		70 - 130

Lab Sample ID: MB 880-31607/5-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31607

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 14:38	08/06/22 12:22	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 14:38	08/06/22 12:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 14:38	08/06/22 12:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 14:38	08/06/22 12:22	1

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-31607/5-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31607

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 14:38	08/06/22 12:22	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 14:38	08/06/22 12:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	08/05/22 14:38	08/06/22 12:22	1
1,4-Difluorobenzene (Surr)	102		70 - 130	08/05/22 14:38	08/06/22 12:22	1

Lab Sample ID: LCS 880-31607/1-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31607

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08131		mg/Kg		81	70 - 130
Toluene	0.100	0.08946		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.09220		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	0.200	0.1908		mg/Kg		95	70 - 130
o-Xylene	0.100	0.09654		mg/Kg		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-31607/2-A

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31607

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09300		mg/Kg		93	70 - 130	13	35
Toluene	0.100	0.09344		mg/Kg		93	70 - 130	4	35
Ethylbenzene	0.100	0.09529		mg/Kg		95	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1949		mg/Kg		97	70 - 130	2	35
o-Xylene	0.100	0.09773		mg/Kg		98	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-17546-A-41-E MS

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31607

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.100	0.06794	F1	mg/Kg		68	70 - 130
Toluene	<0.00200	U F1	0.100	0.06490	F1	mg/Kg		65	70 - 130
Ethylbenzene	<0.00200	U F1	0.100	0.05305	F1	mg/Kg		53	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.201	0.1061	F1	mg/Kg		53	70 - 130
o-Xylene	<0.00200	U F1	0.100	0.05279	F1	mg/Kg		53	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-17546-A-41-E MS

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31607

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 880-17546-A-41-F MSD

Matrix: Solid

Analysis Batch: 31541

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31607

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0998	0.07652		mg/Kg		77	70 - 130	12	35
Toluene	<0.00200	U F1	0.0998	0.07249		mg/Kg		73	70 - 130	11	35
Ethylbenzene	<0.00200	U F1	0.0998	0.06134	F1	mg/Kg		61	70 - 130	15	35
m-Xylene & p-Xylene	<0.00401	U F1	0.200	0.1239	F1	mg/Kg		62	70 - 130	15	35
o-Xylene	<0.00200	U F1	0.0998	0.06039	F1	mg/Kg		61	70 - 130	13	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-31438/1-A

Matrix: Solid

Analysis Batch: 31455

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31438

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/04/22 19:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/04/22 19:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/03/22 15:09	08/04/22 19:53	1

	MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	88		70 - 130	08/03/22 15:09	08/04/22 19:53	1		
o-Terphenyl	104		70 - 130	08/03/22 15:09	08/04/22 19:53	1		

Lab Sample ID: LCS 880-31438/2-A

Matrix: Solid

Analysis Batch: 31455

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31438

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	905.8		mg/Kg		91	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	923.2		mg/Kg		92	70 - 130		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	124		70 - 130
o-Terphenyl	131	S1+	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 880-31438/3-A

Matrix: Solid

Analysis Batch: 31455

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31438

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1071		mg/Kg		107	70 - 130	17	20
Diesel Range Organics (Over C10-C28)	1000	915.2		mg/Kg		92	70 - 130	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	121		70 - 130						
o-Terphenyl	129		70 - 130						

Lab Sample ID: 890-2702-A-1-B MS

Matrix: Solid

Analysis Batch: 31455

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31438

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	757.0		mg/Kg		76	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	642.2	F1	mg/Kg		60	70 - 130		
Surrogate	MS %Recovery	MS Qualifier	Limits								
1-Chlorooctane	67	S1-	70 - 130								
o-Terphenyl	76		70 - 130								

Lab Sample ID: 890-2702-A-1-C MSD

Matrix: Solid

Analysis Batch: 31455

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31438

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	1090	F2	mg/Kg		109	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	755.7		mg/Kg		71	70 - 130	16	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	79		70 - 130								
o-Terphenyl	88		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31444/1-A

Matrix: Solid

Analysis Batch: 31665

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/09/22 14:15	1

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-31444/2-A

Matrix: Solid

Analysis Batch: 31665

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	233.6		mg/Kg		93	90 - 110		

Lab Sample ID: LCSD 880-31444/3-A

Matrix: Solid

Analysis Batch: 31665

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	234.4		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 890-2695-A-4-C MS

Matrix: Solid

Analysis Batch: 31665

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	81.0		251	328.8		mg/Kg		99	90 - 110		

Lab Sample ID: 890-2695-A-4-D MSD

Matrix: Solid

Analysis Batch: 31665

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	81.0		251	327.2		mg/Kg		98	90 - 110	0	20

## QC Association Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## GC VOA

## Prep Batch: 31326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31326/5-A	Method Blank	Total/NA	Solid	5035	

## Analysis Batch: 31541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	8021B	31571
MB 880-31326/5-A	Method Blank	Total/NA	Solid	8021B	31326
MB 880-31571/5-A	Method Blank	Total/NA	Solid	8021B	31571
MB 880-31607/5-A	Method Blank	Total/NA	Solid	8021B	31607
LCS 880-31571/1-A	Lab Control Sample	Total/NA	Solid	8021B	31571
LCS 880-31607/1-A	Lab Control Sample	Total/NA	Solid	8021B	31607
LCSD 880-31571/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31571
LCSD 880-31607/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31607
880-17546-A-41-E MS	Matrix Spike	Total/NA	Solid	8021B	31607
880-17546-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31607
890-2682-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	31571
890-2682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31571

## Prep Batch: 31571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	5035	
MB 880-31571/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31571/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31571/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2682-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Prep Batch: 31607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31607/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31607/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31607/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17546-A-41-E MS	Matrix Spike	Total/NA	Solid	5035	
880-17546-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 31790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 31438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	8015NM Prep	
MB 880-31438/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31438/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31438/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2702-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2702-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

## GC Semi VOA

## Analysis Batch: 31455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	8015B NM	31438
MB 880-31438/1-A	Method Blank	Total/NA	Solid	8015B NM	31438
LCS 880-31438/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31438
LCSD 880-31438/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31438
890-2702-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31438
890-2702-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31438

## Analysis Batch: 31552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 31444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Soluble	Solid	DI Leach	
MB 880-31444/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31444/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31444/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2695-A-4-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2695-A-4-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 31665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2698-1	FS01	Soluble	Solid	300.0	31444
MB 880-31444/1-A	Method Blank	Soluble	Solid	300.0	31444
LCS 880-31444/2-A	Lab Control Sample	Soluble	Solid	300.0	31444
LCSD 880-31444/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31444
890-2695-A-4-C MS	Matrix Spike	Soluble	Solid	300.0	31444
890-2695-A-4-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31444

Lab Chronicle

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

Client Sample ID: FS01  
Date Collected: 08/01/22 12:46  
Date Received: 08/01/22 14:35

Lab Sample ID: 890-2698-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	31571	08/05/22 10:52	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31541	08/06/22 09:12	MR	EETSC MIL
Total/NA	Analysis	Total BTEX		1			31790	08/08/22 14:53	SM	EETSC MIL
Total/NA	Analysis	8015 NM		1			31552	08/05/22 08:59	AJ	EETSC MIL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31438	08/03/22 15:09	DM	EETSC MIL
Total/NA	Analysis	8015B NM		1			31455	08/05/22 03:30	AJ	EETSC MIL
Soluble	Leach	DI Leach			5.03 g	50 mL	31444	08/03/22 17:00	SMC	EETSC MIL
Soluble	Analysis	300.0		1			31665	08/09/22 19:11	CH	EETSC MIL

Laboratory References:  
EETSC MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

## Method Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EETSC MID
Total BTEX	Total BTEX Calculation	TAL SOP	EETSC MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EETSC MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EETSC MID
300.0	Anions, Ion Chromatography	MCAWW	EETSC MID
5035	Closed System Purge and Trap	SW846	EETSC MID
8015NM Prep	Microextraction	SW846	EETSC MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EETSC MID

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

EETSC MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Ensolum  
Project/Site: PLU C1 Frac Pond

Job ID: 890-2698-1  
SDG: 03E1558018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2698-1	FS01	Solid	08/01/22 12:46	08/01/22 14:35	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



## Environment Testing

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

## Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Takema Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum LLC	Company Name:	XTO Energy, Inc
Address:	3122 National Parks Highway	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	337-257-8307	Email:	garrettgreen@xtdnmba.com

Work Order Comments				
Program:	UST/PST <input type="checkbox"/>	PRP <input type="checkbox"/>	Brownfields <input type="checkbox"/>	RRIC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:				
Reporting:	Level II <input type="checkbox"/>	Level III <input type="checkbox"/>	PST/UST <input type="checkbox"/>	TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/>	Adapt <input type="checkbox"/>	Other: _____	

Project Name:		PLU C1 Frae Pond		Turn Around		<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush		Pres. Code		ANALYSIS REQUEST										Preservative Codes	
Project Number:		D3E1558018		Due Date:														None: NO		DI Water: H <sub>2</sub> O	
Project Location:		32.202, -103.832		TAT starts the day received by the lab, if received by 4:30pm														Cool: Cool		MeOH: Me	
Sampler's Name:		Josh Adams																HCL: HC		HNO <sub>3</sub> : HN	
P.O. #:																		H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>		NaOH: Na	
SAMPLE RECEIPT		Temp Blank:		<input checked="" type="radio"/> Yes <input type="radio"/> No		Wet Ice:		<input checked="" type="radio"/> Yes <input type="radio"/> No										H <sub>2</sub> PO <sub>4</sub> : HP			
Samples Received Intact:		<input checked="" type="radio"/> Yes <input type="radio"/> No		Thermometer ID:		1NM-037												NaHSO <sub>4</sub> : NABIS			
Cooler Custody Seals:		<input checked="" type="radio"/> Yes <input type="radio"/> No		Correction Factor:		-0.02												Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			
Sample Custody Seals:		<input checked="" type="radio"/> Yes <input type="radio"/> No		Temperature Reading:		10.0												Zn Acetate+NaOH: Zn			
Total Containers:				Corrected Temperature:		5.8												NaOH+Ascorbic Acid: SACP			
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Grab/Comp		# of Cont									
ES01		S		8/1/22		1246		1'													
				</																	

Total 200.7 / 6010		200.8 / 6020:		8RCRA 13PPM Texas 11		Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed		TCPL / SPLP 6010		8RCRA 5b As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		Hg: 1631 / 245.1 / 7470 / 7471	
<p>Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.</p>							
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		
<i>[Signature]</i>	<i>[Signature]</i>	5.1.22 1435					

Printed Date: 08/25/2020 Rev: 2020.2

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2698-1

SDG Number: 03E1558018

Login Number: 2698

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2698-1

SDG Number: 03E1558018

Login Number: 2698

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 08/03/22 10:15 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



## APPENDIX D

### NMOCD Notifications

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**From:** [Hamlet, Robert, EMNRD](#)  
**To:** [Collins, Melanie](#)  
**Cc:** [DelawareSpills /SM](#); [Aimee Cole](#); [Tacoma Morrissey](#); [Ben Belill](#); [Kalei Jennings](#); [Bratcher, Mike, EMNRD](#); [Nobui, Jennifer, EMNRD](#); [Nobui, Jennifer, EMNRD](#)  
**Subject:** RE: [EXTERNAL] XTO Extension Request - Poker Lake Unit C1 Frac Pond (Incident Number NAPP2207743395)  
**Date:** Wednesday, June 1, 2022 9:11:59 AM  
**Attachments:** [image003.png](#)

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[ \*\*EXTERNAL EMAIL\*\* ]

RE: Incident #**NAPP2207743395**

**Melanie,**

Your request for an extension to **September 1st, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

**Robert Hamlet** • Environmental Specialist - Advanced

Environmental Bureau

EMNRD - Oil Conservation Division

811 S. First Street | Artesia, NM 88210

575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)

<http://www.emnrd.state.nm.us/OCD/>



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**From:** Collins, Melanie <[melanie.collins@exxonmobil.com](mailto:melanie.collins@exxonmobil.com)>

**Sent:** Tuesday, May 31, 2022 9:33 AM

**To:** Enviro, OCD, EMNRD <[OCD.Enviro@state.nm.us](mailto:OCD.Enviro@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Hamlet, Robert, EMNRD <[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)>

**Cc:** DelawareSpills /SM <[DelawareSpills@exxonmobil.com](mailto:DelawareSpills@exxonmobil.com)>; [acole@ensolum.com](mailto:acole@ensolum.com); Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>; [bbelill@ensolum.com](mailto:bbelill@ensolum.com); Kalei Jennings <[kjennings@ensolum.com](mailto:kjennings@ensolum.com)>

**Subject:** [EXTERNAL] XTO Extension Request - Poker Lake Unit C1 Frac Pond (Incident Number NAPP2207743395)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

**Poker Lake Unit C1 Frac Pond (Incident Number NAPP2207743395)**

**All,**

XTO is requesting an extension for the current deadline of June 3, 2022 for submitting a remediation work plan or closure request required in 19.15.29.12.B.(1) NMAC at the Poker Lake Unit C1 Frac

Pond (Incident Number NAPP2207743395). The release occurred on March 5, 2022. Initial assessment of the release has been completed and remediation is ongoing. In order to complete the remediation activities and submit a remediation work plan or closure request, XTO is requesting a 90-day extension until September 1, 2022.

Thank you,

*Melanie Collins*

SSHE Technician



An **ExxonMobil** Subsidiary

6401 Holiday Hill Rd, Bldg 5

Midland, TX 79707

432-218-3709



**From:** [Green, Garrett J](#)  
**To:** [ocd.enviro@state.nm.us](mailto:ocd.enviro@state.nm.us); [Bratcher, Mike, EMNRD](#); [Hamlet, Robert, EMNRD](#)  
**Cc:** [Tacoma Morrissey](#); [Kalei Jennings](#); [DelawareSpills /SM](#)  
**Subject:** XTO - Sampling Notification (Week of 8/1/22 - 8/5/22)  
**Date:** Friday, July 29, 2022 4:11:00 PM

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[ \*\*EXTERNAL EMAIL\*\* ]

All,

XTO plans to complete final sampling activities at the following sites the week of August 1, 2022.

Monday

- PLU C1 Frac Pond / NAPP2207743395
- BEU Connector PW Booster / nAPP2213151424

Tuesday

- BEU Connector PW Booster / nAPP2213151424
- Goldenchild CTB / nAPP2035256230, nAPP2102237559, nAPP2101335437, & nAPP2101331137

Wednesday

- BEU Connector PW Booster / nAPP2213151424
- Ross Draw 25 NW Battery / NAPP2201444794

Thursday

- PLU 89 / NRM1932350962

Thank you,

**Garrett Green**

Environmental Coordinator

Delaware Business Unit

(575) 200-0729

[Garrett.Green@ExxonMobil.com](mailto:Garrett.Green@ExxonMobil.com)

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 140085

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  140085
	Action Type:  [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	11/30/2022